



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,437	01/15/2002	Lawrence W. Hrubesh	IL-10413	6489

7590 07/25/2003

Alan H. Thompson  
Assistant Laboratory Counsel  
Lawrence Livermore National Laboratory  
P.O. Box 808, L-703  
Livermore, CA 94551

EXAMINER

LISH, PETER J

ART UNIT PAPER NUMBER

1754

DATE MAILED: 07/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	<i>[Signature]</i>
	10/050,437	HRUBESH, LAWRENCE W.	
	Examiner Peter J Lish	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 15 January 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-17 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.

4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to which drying methods are included in the limitation that the method limits the shrinkage of the gelled composite material.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-6, and 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Stankiewicz (WO 98/02382).

Stankiewicz teaches a method for producing vitreous carbon foam, wherein a preformed polyurethane open cell foam is impregnated with a liquid carbonaceous resin, such as furfuryl alcohol, furan compounds, or phenolic compounds, etc. The liquid is then cured, or gelled and dried by evaporation, and subsequently pyrolyzed to form a vitreous, or glassy, carbon composed

of the two organic materials. No difference is seen between the process or material of Stankiewicz and that of the instantly claimed invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7-8, and 14-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Stankiewicz.

Stankiewicz is applied above. Stankiewicz teaches that the curing takes place at a temperature within the range of 50 °C to 90 °C and for a time period of between 1 and 15 hours. No difference is seen in the process of curing, taught by Stankiewicz, and the combined gelation and drying processes taught by the applicant. Therefore, it would have been obvious to one of ordinary skill at the time of invention to perform the curing of Stankiewicz at a desired temperature and for a desired length of time, within the ranges taught, which meets the limitations of claims 4, 7, 14, and 15. Additionally, Stankiewicz teaches pyrolysis at a temperature within the range of 900 °C to 2200 °C and for a time period of between 5 and 56 hours. It thus would have been obvious to one of ordinary skill at the time of invention to perform the pyrolysis of Stankiewicz at a desired temperature and for a desired length of time, within the ranges taught, which meets the limitations of claims 8 and 16.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stankiewicz as applied to claims 1-16 above, and further in view of Lersmacher et al. (US 4,024,226).

Stankiewicz teaches the use of a liquid carbonaceous resin, such as furfuryl alcohol, furan compounds, phenolic compounds, etc. Stankiewicz does not explicitly teach the use of resorcinol-formaldehyde or of phenol-formaldehyde. Lersmacher et al. teach a process for the manufacture of vitreous carbon foam, wherein preformed polyurethane foam is impregnated with an impregnating agent, preferably phenol-formaldehyde resin, and the structure is subsequently hardened, or cured, and pyrolyzed to carbon at approximately 1000 °C (column 1, lines 30-50). It would have been obvious to one of ordinary skill at the time of invention to use phenol-formaldehyde as the carbonaceous resin, as taught by Lersmacher, in the process of Stankiewicz, because it is a phenol compound which is particularly useful for the intended purpose.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 703-308-1772. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-305-9311 for After Final communications.

Art Unit: 1754

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

PL

July 9, 2003



STUART L. HENDRICKSON  
PRIMARY EXAMINER